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We claim:

- 1 1. An apparatus integrating forward and panoramic fields, comprising:
 - 2 a primary reflector, comprising a convex surface in relation to the forward field, reflective on at least part
 - 3 of said convex surface;
 - 4 a secondary reflector, forward of said primary reflector relative to said forward field, reflective on at least
 - 5 part a surface thereof facing rearward toward said primary reflector, comprising a substantially flat geometry facing
 - 6 rearward toward said primary reflector;
 - 7 a primary reflector hole in said primary reflector, substantially centered about an optical axis of said
 - 8 apparatus; and
 - 9 a secondary reflector hole in said secondary reflector, substantially centered about said optical axis, said
 - 10 secondary reflector hole comprising a diameter smaller than a diameter of said primary reflector hole.
- 1 2. The apparatus of claim 1, further comprising:
 - 2 at least one field collecting element, forward of said secondary reflector relative to said forward field,
 - 3 substantially centered about said optical axis.
- 1 3. The apparatus of claim 2:
 - 2 said at least one field collecting element comprising at least two field collecting elements, with at least one
 - 3 of said field collecting elements movable along said optical axis.
- 1 4. The apparatus of claim 1, further comprising:
 - 2 at least one field focusing element, rearward of said primary reflector relative to said forward field,
 - 3 substantially centered about said optical axis.
- 1 5. The apparatus of claim 1, further comprising:
 - 2 at least one afocal element, rearward of said primary reflector relative to said forward field, substantially
 - 3 centered about said optical axis.
- 1 6. The apparatus of claim 1, further comprising:
 - 2 at least one field collecting element, forward of said secondary reflector relative to said forward field,
 - 3 substantially centered about said optical axis; and
 - 4 at least one field focusing element, rearward of said primary reflector relative to said forward field,
 - 5 substantially centered about said optical axis.
- 1 7. The apparatus of claim 6, wherein:
 - 2 said primary reflector, said secondary reflector, at least one field collecting element and said at least one
 - 3 field focusing element are configured, in combination, to project a substantially seamless boundary between said
 - 4 forward and panoramic fields onto a detection plane.
- 1 8. The apparatus of claim 6, further comprising:
 - 2 a detector substantially in a focal plane of said at least one field focusing element.
- 1 9. The apparatus of claim 8, said detector comprising an optical detector.
- 1 10. The apparatus of claim 8, said detector comprising an infrared detector.
- 1 11. The apparatus of claim 8, said detector comprising an detector for communications waves.
- 1 12. The apparatus of claim 1:
 - 2 said convex surface of said primary reflector comprising a substantially spherical geometry.
- 1 13. The apparatus of claim 1:
 - 2 said convex surface of said primary reflector comprising a substantially hyperbolic geometry.
- 1 14. The apparatus of claim 1:

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2 said convex surface of said primary reflector comprising a substantially parabolic geometry.

1 15. The apparatus of claim 1, said secondary reflector comprising a concave geometry facing rearward toward
2 said primary reflector.

1 16. The apparatus of claim 1, said secondary reflector comprising a convex geometry facing rearward toward
2 said primary reflector.

1 17. The apparatus of claim 1, wherein said primary reflector can be tilted relative to said optical axis.

1 18. The apparatus of claim 1, wherein said forward and panoramic fields comprise optical fields in the visible
2 light spectrum.

1 19. The apparatus of claim 1, wherein said forward and panoramic fields comprise optical fields in the infrared
2 light spectrum.

1 20. The apparatus of claim 1, wherein said forward and panoramic fields comprise electromagnetic waves.

1 21. The apparatus of claim 1, wherein said forward and panoramic fields comprise electromagnetic waves
2 traveling in free space for communication.

1 22. A method for receiving signals with integrated forward and panoramic fields, comprising:
2 providing a primary reflector, comprising a convex surface in relation to the forward field, reflective on at
3 least part of said convex surface;

4 facing a substantially flat geometry of a secondary reflector, forward of said primary reflector relative to
5 said forward field, reflective on at least part a surface thereof, rearward toward said primary reflector;

6 substantially centering a primary reflector hole in said primary reflector, about an optical axis of said
7 primary reflector and said secondary reflector; and

8 substantially centering a secondary reflector hole in said secondary reflector, about said optical axis;

9 wherein:

10 a diameter of said secondary reflector hole is smaller than a diameter of said primary reflector hole.

1 23. The method of claim 22, further comprising:

2 substantially centering at least one field collecting element, forward of said secondary reflector relative to
3 said forward field, about said optical axis.

1 24. The method of claim 23, wherein said at least one field collecting element comprises at least two field
2 collecting elements, further comprising:

3 moving at least one of said field collecting elements along said optical axis.

1 25. The method of claim 22, further comprising:

2 substantially centering at least one field focusing element, rearward of said primary reflector relative to
3 said forward field, about said optical axis.

1 26. The method of claim 22, further comprising:

2 substantially centering at least one afocal element, rearward of said primary reflector relative to said
3 forward field, about said optical axis.

1 27. The method of claim 22, further comprising:

2 substantially centering at least one field collecting element, forward of said secondary reflector relative to
3 said forward field, about said optical axis; and

4 substantially centering at least one field focusing element, rearward of said primary reflector relative to
5 said forward field, about said optical axis.

1 28. The apparatus of claim 27, further comprising:

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2 configuring said primary reflector, said secondary reflector, at least one field collecting element and said at
3 least one field focusing element are, in combination, to project a substantially seamless boundary between said
4 forward and panoramic fields onto a detection plane.

1 29. The method of claim 27, further comprising:

2 providing a detector substantially in a focal plane of said at least one field focusing element.

1 30. The method of claim 29, said detector comprising an optical detector.

1 31. The method of claim 29, said detector comprising an infrared detector.

1 32. The apparatus of claim 8, said detector comprising an detector for communications waves.

1 33. The method of claim 22:

2 said convex surface of said primary reflector comprising a substantially spherical geometry.

1 34. The method of claim 22:

2 said convex surface of said primary reflector comprising a substantially hyperbolic geometry.

1 35. The method of claim 22:

2 said convex surface of said primary reflector comprising a substantially parabolic geometry.

1 36. The method of claim 22, further comprising:

2 facing a concave geometry of said secondary reflector rearward toward said primary reflector.

1 37. The method of claim 22, further comprising:

2 facing a convex geometry of said secondary reflector rearward toward said primary reflector.

1 38. The method of claim 22, further comprising:

2 tilting said primary reflector relative to said optical axis.

1 39. The apparatus of claim 22, said receiving further comprising:

2 receiving optical fields in the visible light spectrum.

1 40. The apparatus of claim 22, said receiving further comprising:

2 receiving optical fields in the infrared light spectrum.

1 41. The apparatus of claim 22, said receiving further comprising:

2 receiving electromagnetic waves.

1 42. The apparatus of claim 22, said receiving further comprising:

2 communicating through free space by receiving electromagnetic waves.

1 43. An apparatus integrating forward and panoramic fields, comprising:

2 a primary reflector, comprising a convex surface in relation to the forward field, reflective on at least part
3 of said convex surface;

4 a secondary reflector, forward of said primary reflector relative to said forward field, reflective on at least
5 part a surface thereof facing rearward toward said primary reflector, comprising a substantially flat geometry facing
6 rearward toward said primary reflector;

7 a primary reflector hole in said primary reflector, substantially centered about an optical axis of said
8 apparatus; and

9 said secondary reflector comprising a diameter smaller than a diameter of said primary reflector.

1 44. A method for receiving signals with integrated forward and panoramic fields, comprising:

2 providing a primary reflector, comprising a convex surface in relation to the forward field, reflective on at
3 least part of said convex surface;

4 facing a substantially flat geometry of a secondary reflector, forward of said primary reflector relative to
5 said forward field, reflective on at least part a surface thereof, rearward toward said primary reflector;

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- 6 substantially centering a primary reflector hole in said primary reflector, about an optical axis of said
7 primary reflector and said secondary reflector, and
8 substantially centering a secondary reflector hole in said secondary reflector, about said optical axis;
9 wherein:
10 a diameter of said secondary reflector is smaller than a diameter of said primary reflector.